

### REMARKS

Applicant has carefully reviewed the Office Action of February 23, 2007, prior to preparing this response. Currently claims 1, 2, 6-8, 10, 12, 17 and 18 are pending and have been rejected. Favorable consideration of the following remarks is respectfully requested.

Claims 1-2, 8, 10 and 12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Schoenholtz (U.S. Patent No. 6,203,534) in view of Cohen (U.S. Patent No. 5,330,521). Applicant respectfully traverses the rejection.

As a preliminary matter, Applicant notes that to rely on a reference under 35 U.S.C. § 103, it must be analogous art. "In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). Both Schoenholtz and the present invention are in the field of reinforced catheters. In contrast, Cohen is in the field of electrical leads. Moreover, Cohen does not suggest that it is pertinent to the particular problem with which the inventor was concerned. Cohen teaches "an implantable electrical lead having relatively low electrical resistance and good mechanical resistance to cyclical stresses." Column 3, lines 15-17. To this end, Cohen teaches "a wire core formed into a helical coil and having pre-compression." Column 3, lines 18-19. In one embodiment having a wire core with a varying cross-sectional area, the smaller cross-sectional area is capable of withstanding the high repetitive loads from the beating heart, and the larger cross-sectional area reduces the overall electrical resistance of the lead. See column 3, lines 42-52. The concern with repetitive stresses and electrical resistance is not pertinent to the particular problem with which the inventor is concerned, which is a kink resistant catheter with more distal flexibility. For these reasons, Applicant respectfully submits that Cohen would not have commended itself to the attention of an inventor in considering the problem of this invention as an electrical lead is not sufficiently similar to a catheter, and the use of Cohen in this rejection is therefore improper.

Applicant further submits that a *prima facie* case of obviousness with regard to Schoenholtz over Cohen has not been made for at least the reason that there is no motivation or suggestion to combine the references.

For example, claim 1 recites “a proximal braid section” and “a distal braid section” “wherein each continuous wire extends through the proximal braid section and through the distal braid section, and for each continuous wire, the distal cross-sectional area of said continuous wire is less than the proximal cross-sectional area of said continuous wire.” The argument made by the Examiner is that Schoenholtz discloses proximal and distal braid sections and that Cohen teaches a wire core having a cross-sectional area that differs over its length. However, the wire core of Cohen is not braided, nor, according to Cohen, can it be. The wire coil of Cohen is wound into a helix whose turns contact each other. The coil taught by Cohen cannot be used to form a braid because there is no space between the turns of the coil to permit the passage of other coils.

Further, Cohen teaches that “the wire core is designed to minimize mechanical stress in the sections where the lead 40 is subject to high repetitive mechanical loads” and for this reason “the wire core 42 at the distal end 46 of the lead 40 has a relatively small diameter, providing the wire core with good flexibility and resistance to fatigue in that section.” Column 8, lines 30-32, and lines 49-52. Unlike an implantable lead, which is subject to tens of thousands of heartbeats over its useful life, a catheter is used temporarily during a therapeutic procedure and removed upon the completion of that procedure. Resistance to mechanical fatigue is therefore a much lower concern with catheters, ranking far behind other considerations such as trackability, pushability and torqueability. Flexibility and increased distal flexibility are not by themselves sufficient factors to lead one of skill in the art to adopt a design variation. There must be some indication that it is the sort of flexibility useful in catheters.

For at least these reasons, Applicant respectfully submits that claim 1 is in condition for allowance. As claims 2 and 8 depend from claim 1 and contain additional elements, Applicant respectfully submits that these claims are in condition for allowance as well. As independent claim 10 recites “the distal cross-sectional area of each of the continuous wires is less than the proximal cross-sectional area of each of the continuous wires,” Applicant respectfully submits that claim 10 is in condition for allowance for at least the reasons given above with respect to claim 1. As claim 12 depends from claim 10 and contains additional elements, Applicant respectfully submits that this claim is in condition for allowance as well.

Claims 6-7 and 17-18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Schoenholtz in view of Cohen. Applicant respectfully traverses the rejection.

With respect to claims 6 and 17, Applicant respectfully submits that these claims are allowable for at least the reason that they depend from claims 1 or 10, which are allowable, and because they contain additional elements.

With respect to claims 7 and 18, the Examiner argues that it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the system of Schoenholtz in view of Cohen with the wire core ranges claimed, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. However, here the general conditions of claims 7 and 18 are not disclosed in the prior art.

Schoenholtz is silent as to the size of the braided mesh in its embodiment. However, Cohen discloses that its wire core tapers from approximately 0.2 mm to about 0.1 mm. Column 9, lines 24-26. These values are substantially different from the 1.5 mm to 1.0 mm claimed in claim 7, for example. In *In re Aller*, the upper temperature range disclosed in the prior art was 100° C and the claimed temperature range was 40-80° C. This is a variation of 20% to 250%. In contrast, the variation between the disclosed and the claimed values in the present case is 750% to 1000%. In such a case, one cannot say that the general conditions of the claim were disclosed in the prior art.

Cohen even goes so far as to teach away from this modification. If the motivation of modifying Schoenholtz in view of Cohen is to increase distal flexibility, one would not modify the wire of the braid to these dimensions. The claimed distal diameter of about 1 mm far exceeds the proximal diameter disclosed by Cohen of 0.2 mm, a diameter described as having "limited flexibility making them less tolerant of repetitive, cyclical stress." Column 8, lines 11-12. Such flexibility as Cohen may make desirable would be more than prevented by the modification to the wire diameters. For at least this reason, Applicant respectfully submits that claims 7 and 18 are in condition for allowance.

Reexamination and reconsideration are respectfully requested. It is respectfully submitted that all pending claims are now in condition for allowance. Issuance of a Notice of Allowance in due course is requested. If a telephone conference might be of assistance, please contact the undersigned attorney at (612) 677-9050.

Respectfully submitted,

Pu Zhou

By his Attorney,

Date: \_\_\_\_\_

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